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## Assessing Cultural Ecosystem Services using GIS-Based Landscape Values Mapping. Case Study: Olympic Peninsula Human Ecology Mapping Project

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# Assessing Cultural Ecosystem Services using GIS-Based Landscape Values Mapping

## Case Study: Olympic Peninsula Human Ecology Mapping Project

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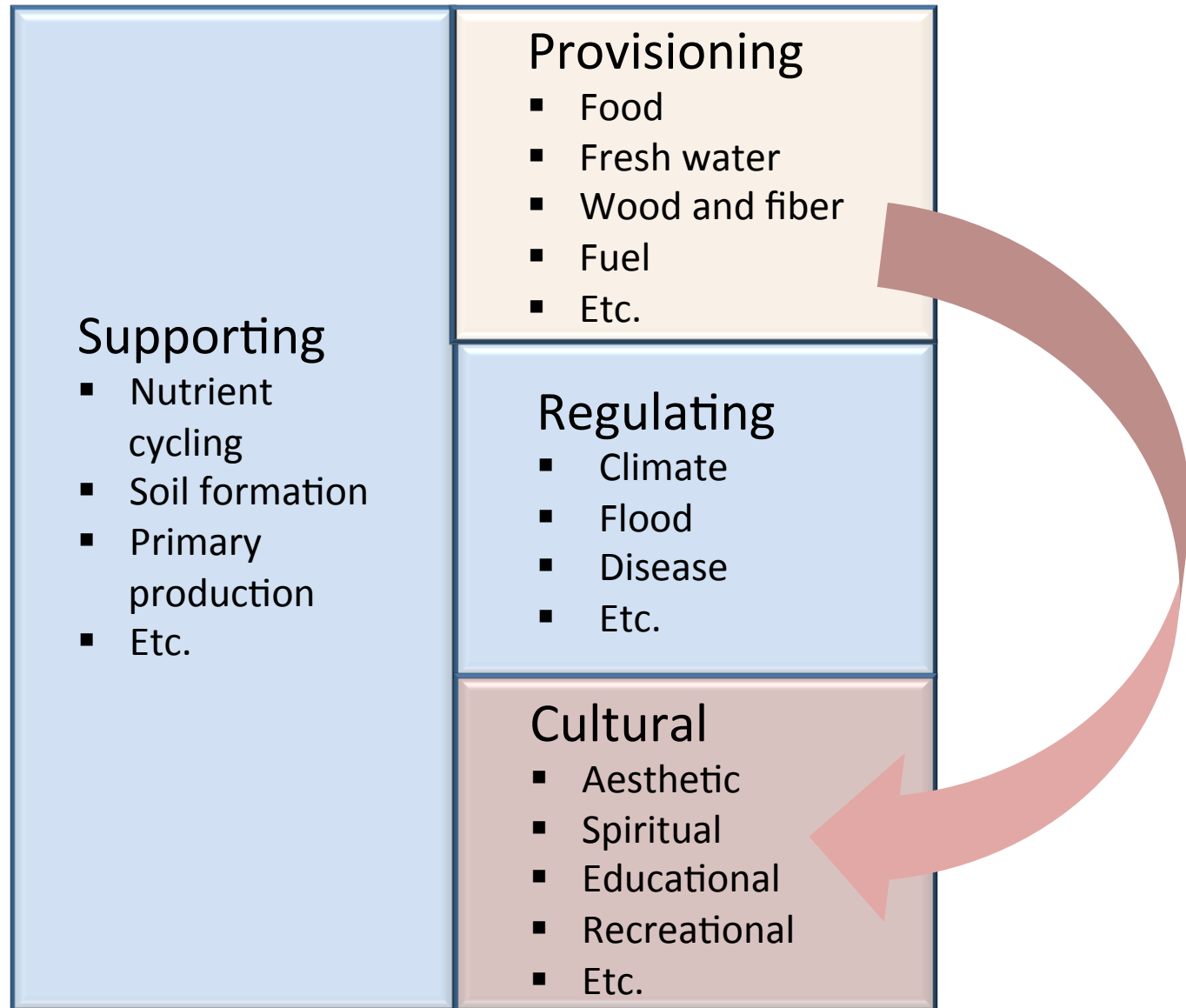
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ISS Research to Action Symposium, Portland, OR  
October 25, 2013



Project funded through USDA Forest Service,  
Pacific Northwest Research Station, Seattle, WA

# Millennium Ecosystem Assessment Framework



# USFS Forest Planning Rule

(Assess needs, develop plan components with scientific and public input, submit for comment and approval)

## SUSTAINABILITY (§219.8)

### **Social & Economic Sustainability**

- Social, cultural, economic conditions
- Sustainable recreation
- Multiple uses & sustainable economics
- Cultural/historic resources and uses
- Opportunities to connect people with nature

## MULTIPLE USE (§219.10)

### **Integrated Resource Management for Multiple Use**

- Aesthetic values, cultural/heritage
- Renewable/nonrenewable resources
- Infrastructure
- Landscape coordination
- Habitat conditions
- Land ownership patterns
- Ecological/social/economic sustainability
- Connect people with nature

# Olympic Peninsula Mapping Project Objectives

- Develop and test a method for mapping sociocultural values at a bioregional scale.
- Test techniques for analyzing spatialized sociocultural values data.
- **Explore ways to integrate spatialized sociocultural values into forest management planning.**



# Landscape Values Mapping Approach

## Landscape Values

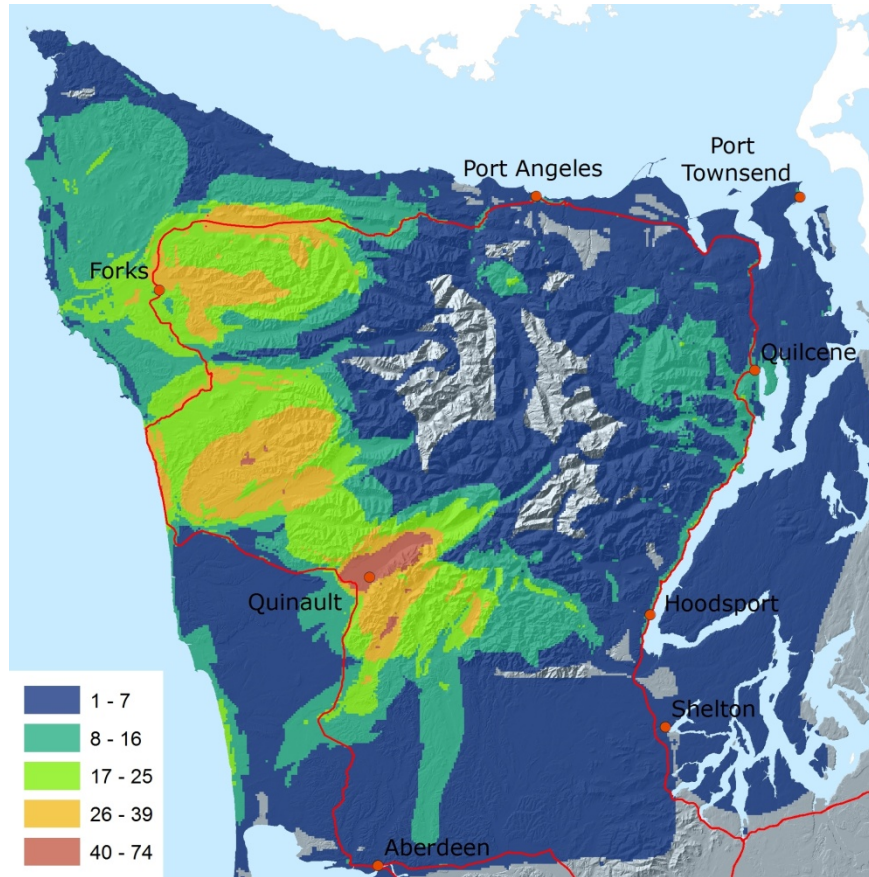
- Aesthetic
- Economic
- Environ. Quality
- Future
- Health
- Heritage
- Home
- Intrinsic
- Learning
- Recreation
- Social
- Spiritual
- Subsistence
- Wilderness



- 8 Community Workshops (2010-11)
- 2 Mapping Activities (Values & Uses)
- Points, Lines or Polygons

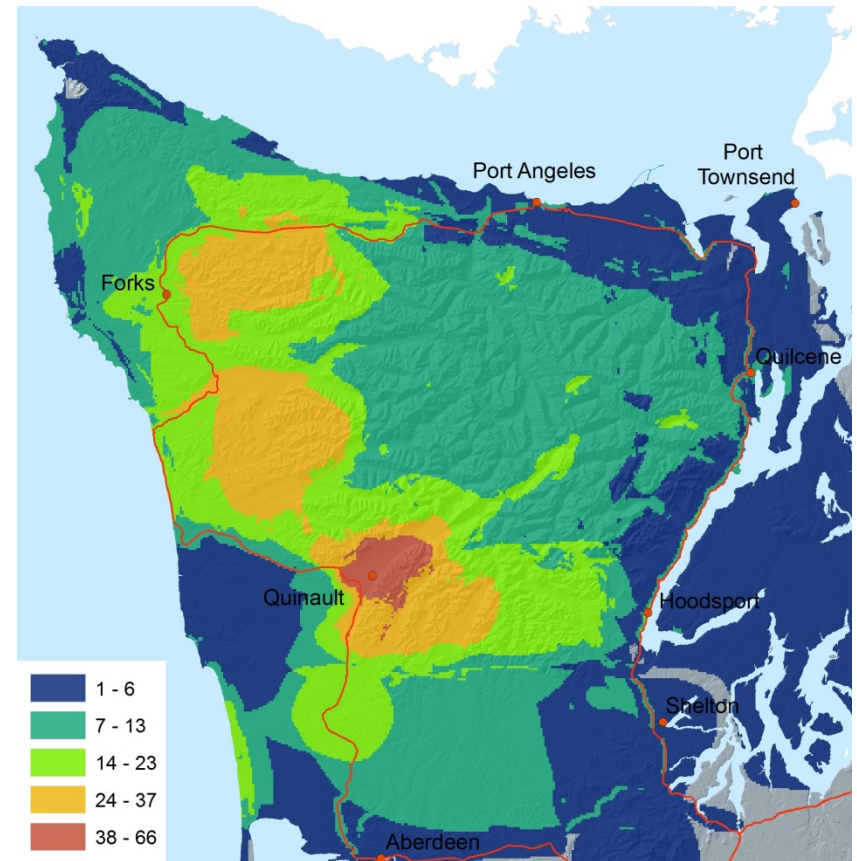


## Activities Density



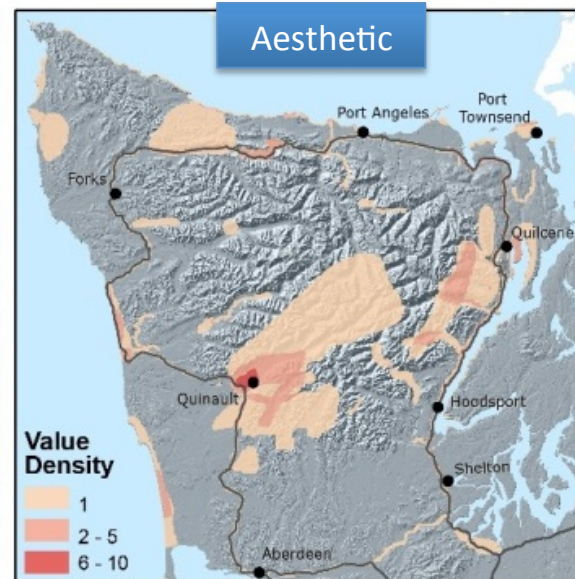
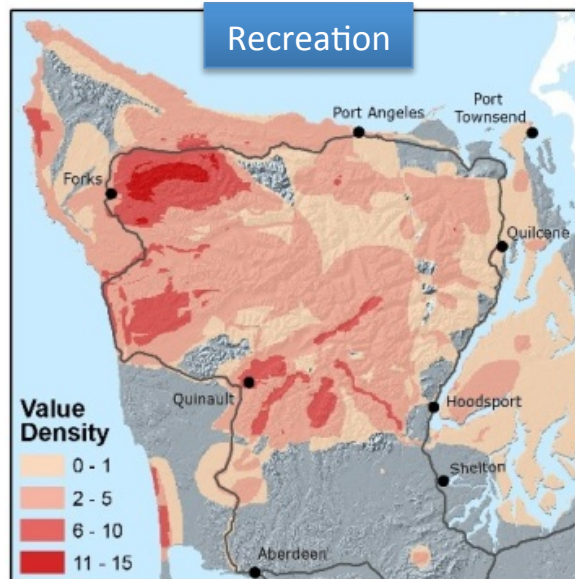
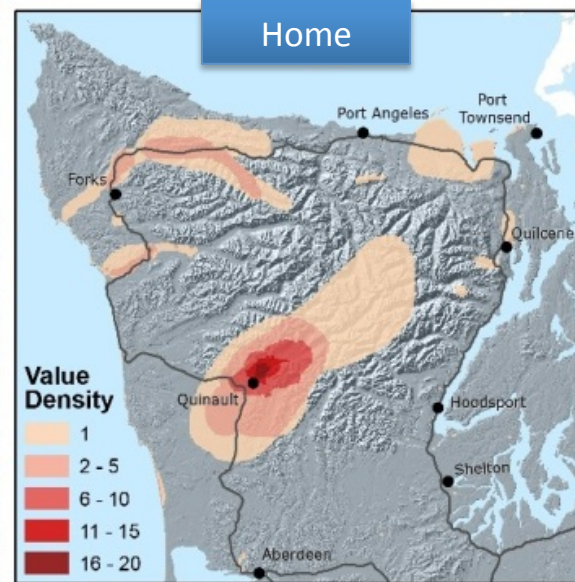
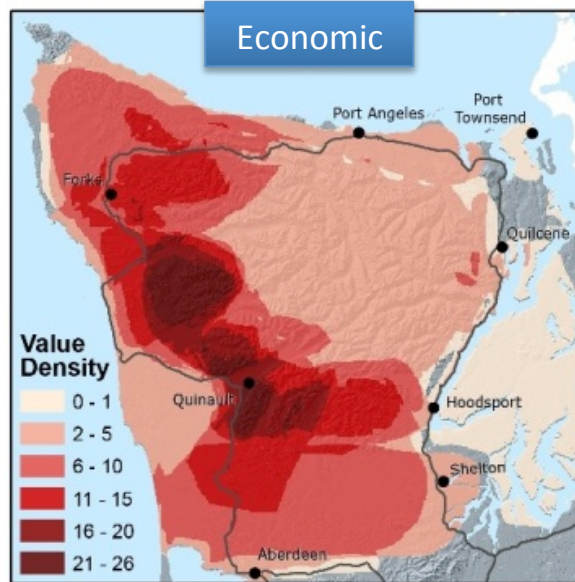
## Data Analysis: Uses vs. Values

## Values Density



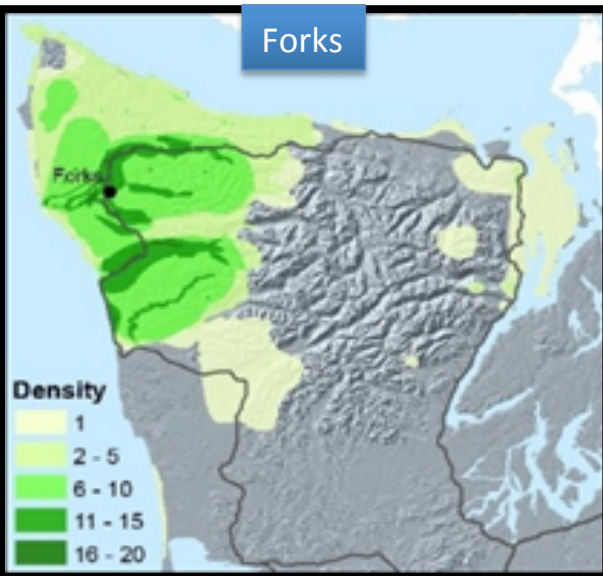


# Data Analysis: Spatial Patterns of Different Values

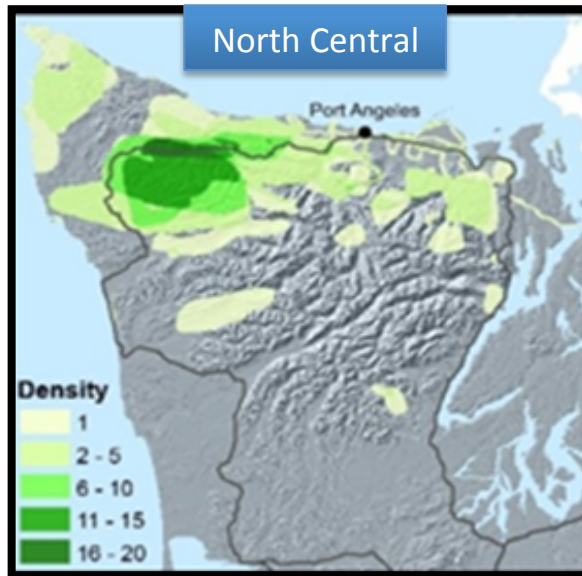




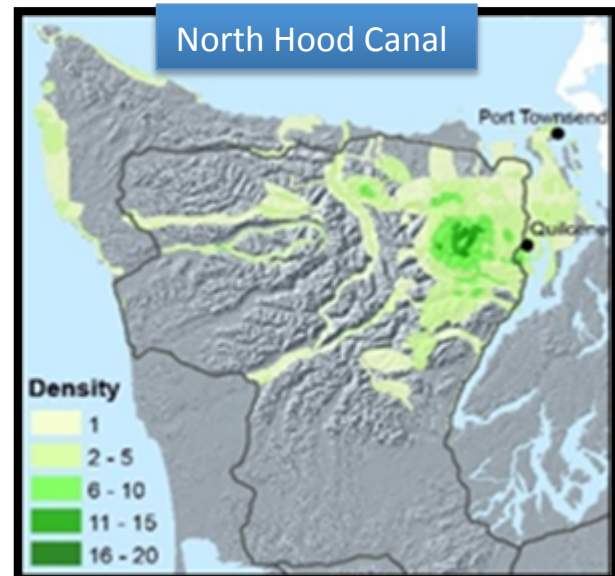
Forks



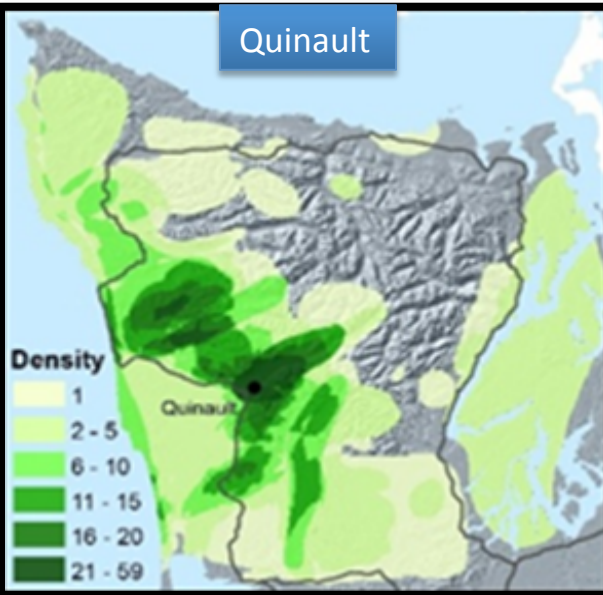
North Central



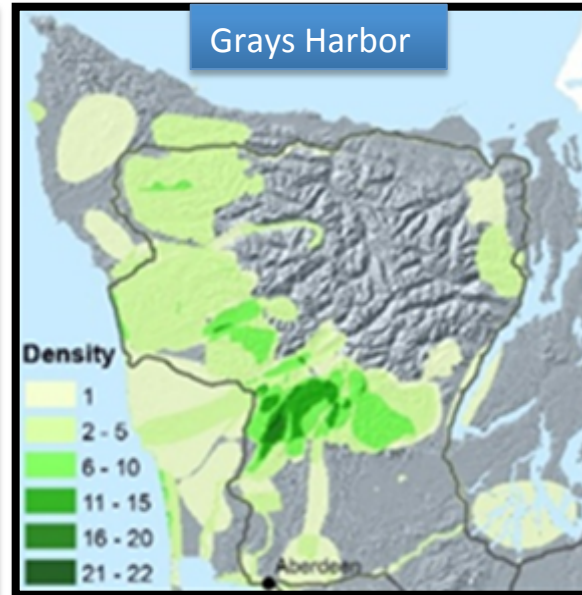
North Hood Canal



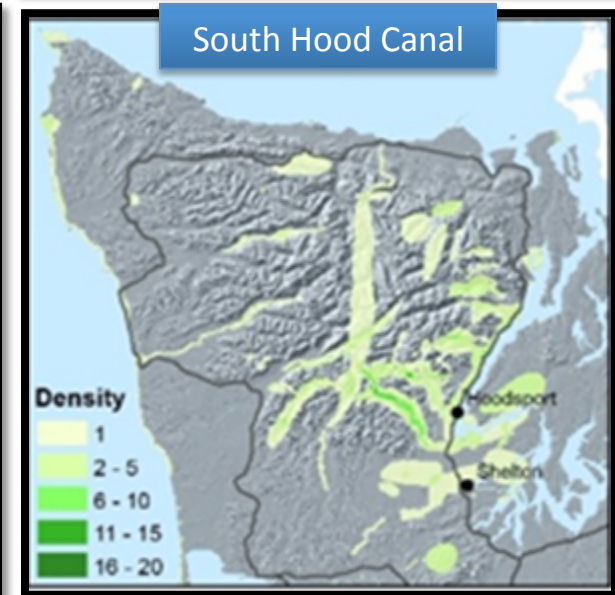
Quinault



Grays Harbor



South Hood Canal



**Data Analysis: Community-Specific Landscape Values**

# Next Steps: Challenges and Opportunities

- Challenge: What are the obstacles to integrating cultural services data into land management plans?
  - Qualitative vs. quantitative data.
  - Political nature of cultural services – it's about values.
  - Lack of expertise and agency capacity.
- Opportunity: This is really about starting a conversation about what people value on the landscape to make more informed decisions.
  - Integrate data collection into a public engagement process.
  - Enhance public understanding of cultural ecosystem services.



**Download the Olympic Peninsula HEM Atlas:  
<http://www.pdx.edu/geography/human-ecology-mapping>**

**PSU Social Sustainability Colloquium  
Friday Nov. 8<sup>th</sup> 2-4pm, Rec Center Bldg., Rm. 660  
“The politics of cultural values mapping: Struggles over natural resources  
on the Olympic Peninsula”**

Photo by R. McLain